LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) Device ~~(10)~~ for measuring flexural damping in a fibre ~~(1)~~ comprising: a transducer ~~(6)~~ driven by an input signal ~~(13)~~ to excite the fibre ~~(1)~~ laterally at different frequencies (F), such that the fibre ~~(1)~~ vibrates perpendicular to its axis(x2, z2) about a rest position, and a sensor ~~(4)~~ to detect fibre motion in order to measure phase delay between the input signal ~~(13)~~ and a output signal ~~(14)~~ of the sensor ~~(4)~~.

2. (Currently Amended) Device ~~(10)~~ according to claim 1, ~~characterized in that~~ wherein the transducer ~~(6)~~ is mechanically connected to the fibre ~~(1)~~, such that one end ~~(17)~~ of the fibre ~~(1)~~ is deflected parallel in a first direction (z1) and/or such that one end ~~(17)~~ of the fibre ~~(1)~~ is rocked around a first axis (R).

3. (Currently Amended) Device ~~(10)~~ according ~~one of the previous claims, characterized in that~~ to claim 1, wherein the transducer ~~(6)~~ is mechanically connected to a clamp ~~(20)~~ for clamping the fibre ~~(20)~~ at a first end ~~(17)~~.

4. (Currently Amended) Device ~~(10)~~ according ~~one of the previous claims, characterized in that~~ to claim 1, wherein the transducer ~~(6)~~ is at least one selected from the group consisting of a piezoelectric transducer, ~~or~~ an electromagnetic transducer, ~~or~~ an electrical motor ~~or~~ and a capacitive transducer for exciting the fibre ~~(1)~~.

5. (Currently Amended) Device ~~(10)~~ according to claim 4, ~~characterized in that~~ wherein the transducer ~~(6) comprises~~ includes a clamp for clamping the fibre ~~(1)~~ or ~~comprises~~ a surface for fixing the fibre ~~(1)~~ by the use of glue.

6. (Currently Amended) Device ~~(10)~~ according to ~~one of the previous claims, characterized in that~~ claim 1, wherein the sensor ~~(4)~~ is a light barrier ~~comprising~~ having a light emitter ~~(2)~~ generating a

light beam ~~(5)~~ and a light receiver ~~(3)~~ arranged such that the light beam ~~(5)~~ is interrupted by the fibre ~~(1)~~ during vibration (x2, z2).

7. (Currently Amended) Device ~~(10)~~ according to claim 6, ~~characterized in that~~ wherein the sensor ~~(4)~~ ~~comprises~~ includes an adjustable aperture ~~(29)~~ to adjust the sensor ~~(4)~~.

8. (Currently Amended) Device according to ~~claims 6 or 7, characterized in that~~ claim 6, wherein the light emitter ~~(2)~~ in the light barrier ~~(4)~~ is a laser or a photo diode.

9. (Currently Amended) Device ~~(10)~~ according to ~~one of the previous claims, characterized in that~~ claim 1, wherein a first transducer ~~(6.1)~~ is arranged such that a first fibre ~~(1.1)~~ is arranged in a general z-direction, parallel to earth gravity and a second transducer ~~(6.2)~~ is arranged such that a second fibre ~~(1.2)~~ is arranged in a general x-direction, perpendicular to earth gravity.

10. (Currently Amended) Device ~~(10)~~ according to ~~one of the claims 1 to 9, characterized in that~~ claim 1, wherein a transducer ~~(6)~~ is arranged movable between a first vertical position, such that a fibre ~~(1)~~ is arranged in general z-direction, parallel to earth gravity, and a second horizontal position, such that a fibre ~~(1)~~ is arranged in a general x-direction, perpendicular to earth gravity.

11. (Currently Amended) Device ~~(10)~~ according to ~~one of the previous claims, characterized in that~~ claim 1, wherein the device ~~(10)~~ is arranged in an environmental chamber ~~(26)~~ ~~comprising~~ having at least one selected from the group consisting of means to control the temperature, ~~(30,39) and/or to~~ means to control the pressure ~~(32,34)~~, and ~~and/or to~~ means to control the humidity ~~(36,38)~~ inside of the chamber.

12. (Currently Amended) Method of measuring the flexural damping in a fibre ~~(1)~~ using the device according to ~~one of the claims 1 to 11~~ claim 1 comprising the following steps: Mechanically connecting the fibre ~~(1)~~ to a transducer ~~(6)~~; inducing flexural vibration into the fibre ~~(1)~~; carrying out a fast scan with the excitation signal ~~(13)~~ varying over a wide range of frequencies (F) in order

to identify a resonance frequency ($F_{O, Res}$) of the fibre ~~(1)~~; performing a series of measurements at frequencies (F) around the resonance frequency ($F_{O, Res}$) found; and analysing the acquired data in order to determine the phase curve ~~(12)~~ and its slope (α)

13. (Currently Amended) Method for determining a phase curve ~~(12)~~ of a resonant system from the periodic disturbance in the electrical signal ~~(14)~~ of a sensor ~~(4)~~ due to the motion of the vibrating structure ~~(1)~~, comprising the following steps: inducing a vibration into the system to be measured ~~(1)~~; carrying out a fast scan with the excitation signal ~~(13)~~ varying over a wide range of frequencies (F) in order to identify a resonance frequency ($F_{O, Res}$) of the system ~~(1)~~; performing a series of measurement at frequencies (F) around the resonance frequency ($F_{O, Res}$) found; and analyzing the acquired data in order to determine the phase curve ~~(12)~~ and its slope α.

14. (New) Device according to claim 7, wherein the light emitter in the light barrier is a laser or a photo diode.